NOTES ICHTYOLOGIQUES / *ICHTHYOLOGICAL NOTES*

NEMATOPS CHUI FOWLER, 1934: A JUNIOR SYNONYM OF *NEMATOPS MACROCHIRUS* NORMAN, 1931 (POECILOPSETTIDAE, PLEURONECTIFORMES)

by

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RÉSUMÉ. - *Nematops chui* Fowler, 1934 : un synonyme junior de *Nematops macrochirus* Norman, 1931 (Poecilopsettidae, Pleuronectiformes).

Fowler (1934) a décrit *Nematops chui* à partir d'un seul spécimen capturé au large de Luzon, aux Philippines. En comparant ce spécimen avec d'autres *Nematops* (sauf *N. macrochirus* Norman, 1931), Fowler distingue *N. chui* par trois caractéristiques : hauteur du corps presque 3 fois dans la longueur standard, 48 écailles sur la ligne latérale et un tentacule sur l'œil inférieur seulement. Nous avons comparé l'holotype de *N. chui* avec des spécimens de *N. macrochirus* (incluant les types) et nous avons trouvé que *N. chui* a une hauteur du corps semblable à celle de *N. macrochirus*. Aussi, le nombre d'écailles sur la ligne latérale de l'holotype de *N. chui* est approximativement de 58 (non 48) et cette valeur se retrouve dans les limites des valeurs pour *N. macrochirus*. Finalement, les spécimens de *N. macrochirus* examinés (N = 37) avaient un tentacule sur les deux yeux, sur un œil seulement ou pas de tentacule du tout, ce qui élimine la troisième caractéristique diagnostique de *N. chui*. Comme nous n'avons pu trouver d'autres caractéristiques propres à *N. chui*, nous concluons que c'est un synonyme junior de *N. macrochirus*.

Key words. - Poecilopsettidae - *Nematops chui* - *Nematops macrochirus* - Synonymy.

The flatfish genus *Nematops* Günther, 1880 (Pleuronectiformes; Poecilopsettidae *sensu* Cooper and Chapleau, 1998) is easily identifiable by the combination of the following characters: large eyes on the right side, absence of lateral line on the blind side, presence of an ocular side nasal bone, three anal fin pterygiophores between the enlarged first pterygiophore of the anal fin and the hemal spine of the first caudal vertebrae and a tentacle usually found on one or both eyes (Guibord and Chapleau, 2002). Four nominal species are currently included in this genus (*N. microstomus* Günther, 1880; *N. grandisquamus* Weber & de Beaufort, 1929; *N. macrochirus* Norman, 1931; *N. chui* Fowler, 1934). *N. microstomus* and *N. grandisquamus* are deep-bodied species (body depth nearly two times in standard length), but the latter species has fewer lateral line scales than does the former (Weber and de Beaufort, 1929; Norman, 1934; Sakamoto, 1993). *N. macrochirus* and *N. chui* have a slender body (body depth nearly 3 times in standard length). Male *N. macrochirus* have a longer ocular side pectoral fin than do females (about equal to length of head) (Sakamoto, 1993). The holotype of *N. chui* also has a long ocular side pectoral fin and, according to Fowler (1934), it has a tentacle only on the lower eye and a low number of lateral line scales (48).

Given the similarities between *N. macrochirus* and *N. chui* and the fact that Fowler (1934) never directly compared these two nominal species, we undertook this study to evaluate the status of *N. chui*.

MATERIAL AND METHODS

Counts and measurements follow Hubbs and Lagler (1958) except for the length of the lateral line curve that was measured from the anteriormost to the posteriormost portion of the curve. The first dorsal fin ray is measured from the base to the distal tip of the ray. Measurements were taken with a dial calliper to the nearest 0.1 mm. Counts of vertebrae, dorsal and anal fin rays were made from radiographs. Guibord and Chapleau (2002) previously demonstrated that 12 of 13 paratypes of *Poecilopsetta megalepis* Fowler, 1934, a junior synonym of *P. plinthus* (Jordan and Starks, 1904), belong to *Nematops macrochirus* Norman, 1931. These specimens were also used as comparative material in the present study. Institutional abbreviations follow Eschmeyer (1998).

Material examined

All measurements in standard length.

Nematops chui. - Holotype: USNM 93087; Pacific, Philippine Is.; taken at the Cebu Fish Market during the Albatross expedition to the Philippines; 5 Apr. 1908; male: 65.5 mm.

Nematops macrochirus. - Holotype: BMNH 1931.7.23:1; Bali Strait, 8°29’S-114°40’E; 200 m; 15 Apr. 1929; male: 85.5 mm. AMS I.22641-001; E of Sydney, NSW; 33°45’S-151°59’E; 440-448 m; vessel Kapala; 8 May 1981; 2 females: 55.3-70.0 mm. AMS I.22821-044; Australia, Indian Ocean, Northwest shelf, 200 km NW of Port Hedland; 18°16’S-118°12’E; 298-320 m; vessel Soela, 10-11 Apr. 1982; 3 males and 2 females: 82.2-98.0 mm. AMS I.22825-003; Indian Ocean, Northwest shelf, 200 km NW of Port Hedland; 18°59’S-117°10’E; 300-326 m; vessel Soela; 13 Apr. 1982; 3 males and 3 females: 79.7-91.8 mm. AMS I.23386-001; Sydney, Jervis Bay; 34°21’S-151°21’E; 270-281 m; vessel Kapala; 13 Dec. 1978; 1 male and 2 females: 80.5-87.0 mm. AMS I.23999-001; SE of Yamba, NSW; 29°40’S-153°47’W; 475 m; vessel Kapala; 7 Nov. 1978; 1 male and 2 females: 71.5-91.4 mm. AMS I.24420-004; off Port Kembla, NSW; 34°27’S-151°19’E; 329-402 m; vessel Kapala; 18 May 1983; female: 95.0 mm. AMS I.24494-001; off Sydney, NSW; 33°40’S-151°54’E; 439 m; vessel Kapala; 26 Jun. 1979; 1 male and 1 female: 67.0-76.8 mm. AMS I.25932-005; E of Port Jackson, NSW; 33°44’S-151°57’E; 439-466 m; vessel Kapala; 19 Dec. 1985; male: 71.7 mm. WAM P.25401-019; off Browse Is. WA; 13°47’S-123°18’E; 242 m; vessel Umitaka Maru; 23 Dec 1969; male: 77.4 mm. ZMUC P853081; off Jamestown, St. Helena; Feb. 1930; male: 80.1 mm.

Paratypes of *Poecilopsetta megalepis* identified as *N. macrochirus* (see Guibord and Chapleau, 2002). - USNM 93571; Pacific Philippines, between Cebu and Bohol; 10º10’30’’N-123º51’15’’E; 265 m (145 fms); vessel Albatross, Sta. 5411; 23 Mar. 1909; female: 68.3 mm. USNM 93573; Pacific Philippines, between Cebu and Bohol; 10º08’50’’N-123º52’30’’E; 291 m (159 fms); vessel Albatross, Sta. 5418; 25 Mar. 1909; 3 males: 59.6-83.9 mm. USNM 93574; Pacific Philippines, between Cebu and Bohol; 10º09’15’’N-123º52’E; 296 m (162 fms); vessel Albatross, Sta. 5412; 23 Mar. 1909; 2 females: 78.8-81.6 mm. USNM 93575; Pacific Philippines, between Cebu and Bohol; 10°10’N-123º53’15’’E; 302 m (165 fms); vessel Albatross, Sta. 5417; 25 Mar. 1909; 2 males and 1 female: 71.6-81.4 mm.

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USNM 93576; Pacific Philippines, Balabac Strait; 07°50'45''N-116°43'15''E; 271 m (148 fms); vessel Albatross, Sta. 5353; 1 Jan. 1909; male: 66.3 mm. USNM 93578; Pacific Philippines, China Sea, vicinity Southern Luzon, Malavatuan Is.; 13°57'30''N-120°22'15''E; 214 m (117 fms); vessel Albatross, Sta. 5279; 17 Jul. 1908; female: 70.5 mm.

RESULTS AND DISCUSSION

Nematops chui and *N. macrochirus* (Fig. 1, Tabs I, II) completely overlap in all morphometric and meristic characters examined including the three diagnostic characters given by Fowler (1934) in his description of *N. chui*. *N. chui* was described based on a single specimen (male) collected in the South China Sea, off Luzon (Fowler, 1934). Fowler (1934) compares the holotype of *N. chui* with only two of the three other species of *Nematops* (*N. microstomus* and *N. grandisquamus*, two species with deep bodies). Seemingly, *N. macrochirus* was not known to Fowler (1934) because he did not mention it in the comparison section of his description. Fowler provided three distinguishing characteristics for the holotype of *N. chui* relative to the other two *Nematops*: body depth nearly 3 times in standard length, 48 lateral line scales and a tentacle only on the lower orbit. The holotype of *N. chui* has a body depth similar to *N. macrochirus* (Tab. I).

Fowler (1934: 340) stated that the holotype of *N. chui* has "Scales 48 in lateral line to caudal base (…)". Generally, lateral line scales are easily lost in *Nematops* and empty pockets of lateral line scales are difficult to delimit. This renders this particular character difficult to use in species identifications. There are 43 lateral line scales remaining on the holotype of *N. chui*. Most of the scales situated on the curve of the lateral line just dorsal to the pectoral fin are missing. In other species of *Nematops* (including *N. macrochirus*), nearly 20 scales are found on the lateral line curve (Guibord and Chapleau, pers. obs). We estimate that 15 scales can be added to the count for the holotype of *N. chui*, bringing lateral line scale total to approximately 58. This total is within the range observed for *N. macrochirus* (Tab. II) (see also Sakamoto, 1993).

The third character used by Fowler to distinguish his new species is the presence of a tentacle only on the lower eye. This character is variable within species of *Nematops*. For example, in 37

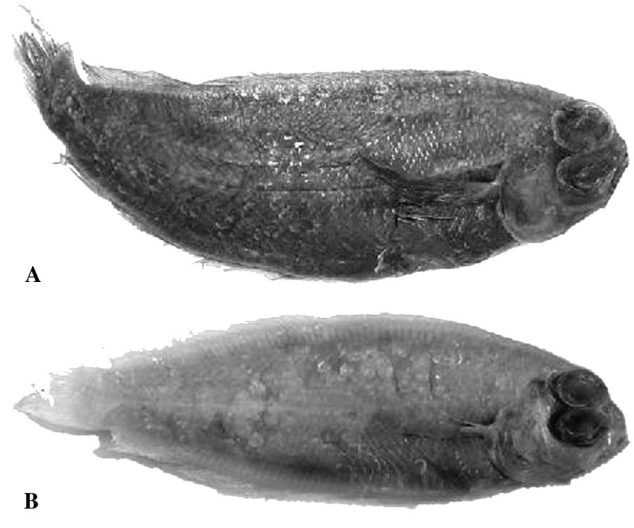

Figure 1. - Holotypes. **A**: *Nematops chui* (USNM 93087; male; 65.5 mm SL). **B**: *Nematops macrochirus* (BMNH 1931.7.23:1; male; 85.5 mm SL).

Table I. - Comparison of morphometric characters between the holotype of *Nematops chui* and the type and non-type specimens of *N. macrochirus*. Standard length (L_S), head length (L_H), body depth (D_B), length of curve in lateral line (L_{CLL}), length of caudal peduncle (L_{CP}), length of upper orbit (L_{UO}), length of lower orbit (L_{LO}), length of ocular side upper jaw (L_{UJO}), length of blind side upper jaw (L_{UJB}) length of ocular side lower jaw (L_{LJO}), length of blind side lower jaw (L_{LJB}), length of ocular side pectoral fin in males (L_{PectOM}), length of ocular side pectoral fin in females (L_{PectOF}), length of blind side pectoral fin in males (L_{PectBM}), length of blind side pectoral fin in females (L_{PectBF}), length of ocular side pelvic fin (L_{PelvO}), length of longest dorsal fin ray (L_{LDR}), length of longest anal fin ray (L_{LAR}) and length of first dorsal fin ray (L_{FDR}). Numbers in parenthesis represent number of specimens surveyed for that character (when different from total number of specimens). *[Comparaison des caractères morphométriques et méristiques entre* Nematops chui *et* N. macrochirus. *Longueur standard (L_S), longueur de la tête (L_H), hauteur du corps (D_B), longueur de la courbe dans la ligne latérale (LCLL), longueur du pédoncule caudal (L_{CP}), diamètre de l'orbite supérieure (LUO), diamètre de l'orbite inférieure (L_{LO}), longueur de la mâchoire supérieure du côté oculé (L_{UJO}), longueur de la mâchoire supérieure de côté aveugle (L_{UJB}), longueur de la mâchoire inférieure du côté oculé (L_{LJO}), longueur de la mâchoire inférieure du côté aveugle (L_{LJB}), longueur de la nageoire pectorale du côté oculé chez les mâles (L_{PectOM}), longueur de la nageoire pectorale du côté oculé chez les femelles (L_{PectBF}), longueur de la nageoire pelvienne du côté oculé (L_{PelvO}), plus long rayon de la nageoire dorsale (L_{LDR}), plus long rayon de la nageoire anale (L_{LAR}) et longueur du premier rayon de la nageoire dorsale (L_{FDR}). Les chiffres entre parenthèses représentent le nombre de spécimens observés (autre que le nombre total).]*

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Measurements	*Nematops chui* Holotype USNM 93087	*N. macrochirus* Holotype BMNH 1931.7.23:1	*N. macrochirus* N = 36
L_S	65.50	85.50	55.3-98.0
In L_S			
L_H	4.14	4.18	3.90-5.14
D_B	3.00	2.74	2.44-3.60
L_{CLL}		4.93	4.86-6.17 (11)
L_{CP}	21.99	18.23	15.83-34.85
In L_H			
L_{UO}	2.34	2.17	2.06-2.64
L_{LO}	2.23	2.47	2.02-2.67
L_{UJO}	3.49	3.66	2.57-3.75
L_{UJB}	3.85	3.94	3.08-4.07 (35)
L_{LJO}	2.48	2.63	2.12-2.81
L_{LJB}	2.63	2.62	2.12-2.74
L_{PectOM}	1.08	0.89	0.82-1.32 (19)
L_{PectOF}	-	-	1.55-2.20 (17)
L_{PectBM}	1.81	2.20	1.52-2.10 (19)
L_{PectBF}	-	-	1.66-2.44 (17)
L_{PelvO}	2.67	2.77	2.20-3.03 (35)
L_{LDR}	1.97	2.02	1.58-2.41
L_{LAR}	2.18	2.20	1.52-2.46
L_{FDR}	3.33	3.73	2.75-5.67 (34)

Table II. - Frequency distribution for principal meristic characters of *Nematops macrochirus*. Numbers in bold correspond to data for the holotype of *N. chui*. Asterisk: data for holotype of *N. macrochirus*. Mean represents values for *N. macrochirus*, excluding value for *N. chui*. *[Distribution des principales caractéristiques méristiques pour* Nematops macrochirus. *Les caractères gras représentent les données pour l'holotype de* N. chui. *Astérisque : données pour l'holotype de* N. macrochirus. *Les moyennes excluent les valeurs de l'holotype de* N. chui.*]*

Dorsal fin rays	59	60	62	63	64	65	66	67	68		n	$\bar{x}$
	1	2	4	4*	**7**	7	5	6	2		37	64.5
Anal fin rays	45	50	51	52	53	54	55	56	57	58		
	1	1	2	4	**4***	11	5	6	2	2	37	54.0
Ocular side	6	7	8	9								
pectoral fin rays	2	14	**18***	4							37	7.6
Blind side pectoral	6	7	8									
fin rays	10	**23***	5								37	6.9
Caudal vertebrae	27	28	29	30								
	2	**10**	25*	1							37	28.7
Lateral line scales	53	54	56	58	60	61	62	64	65			
	1	1	2	**2***[a]	1	2	2	1	2		13	59.8

a: estimated number of lateral line scales for *N. chui*.

specimens of *N. macrochirus* examined, two had no tentacles, 16 had one (on the lower eye) and 19 had two tentacles (including the holotype). Specimens without tentacles can be identified as *Nematops* on the basis of the presence of a nasal bone on the ocular side (absent in *Poecilopsetta* and *Marleyella*) and on the number of proximal pterygiophores found between the first anal fin pterygiophore and the hemal spine of the first caudal vertebra (three for *Nematops*; two for *Poecilopsetta* and *Marleyella*; Guibord and Chapleau, pers. obs.). Furthermore, these specimens can be confidently assigned to *N. macrochirus* based on the length of their ocular side pectoral fins (in males) and because of their slender body shape.

When comparing the total evidence (Tabs I, II), we observe a complete overlap in the meristic and morphometric characters between *N. chui* and *N. macrochirus*. Thus, we conclude that *N. chui* is a junior synonym of *N. macrochirus* Norman, 1931.

The collection locality (Cebu Island) for the holotype of *Nematops chui* falls within the geographic range of *N. macrochirus* which is distributed along the deep outer continental shelf waters of the Western Pacific Ocean from the Philippines south to off Sydney NSW and Westward into the Indian Ocean to the Northwest shelf of Australia. Interestingly, one specimen was collected off the coast of St. Helena in the Atlantic Ocean (see Nielsen, 1961 for a possible dispersal explanation).

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